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NOTICE OF ALLOWANCE AND FEE(S) DUE

27366 7590 01/13/2009

WESTMAN CHAMPLIN (MICROSOFT CORPORATION)
SUITE 1400
900 SECOND AVENUE SOUTH
MINNEAPOLIS, MN 55402-3244

EXAMINER

COUGHLAN, PETER D

ART UNIT

PAPER NUMBER

2129

DATE MAILED: 01/13/2009

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/732,741

12/10/2003

Yunbo Cao

M61.12-0555

6672

TITLE OF INVENTION: UNCERTAINTY REDUCTION IN COLLABORATIVE BOOTSTRAPPING

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	04/13/2009

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

27366 7590 01/13/2009

**WESTMAN CHAMPLIN (MICROSOFT CORPORATION)
SUITE 1400
900 SECOND AVENUE SOUTH
MINNEAPOLIS, MN 55402-3244**

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/732,741	12/10/2003	Yunbo Cao	M61.12-0555	6672

TITLE OF INVENTION: UNCERTAINTY REDUCTION IN COLLABORATIVE BOOTSTRAPPING

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	04/13/2009

EXAMINER	ART UNIT	CLASS-SUBCLASS
COUGHLAN, PETER D	2129	706-045000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
- 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s); (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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27366	7590	01/13/2009	EXAMINER	
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SUITE 1400			ART UNIT	PAPER NUMBER
900 SECOND AVENUE SOUTH			2129	
MINNEAPOLIS, MN 55402-3244			DATE MAILED: 01/13/2009	

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 322 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 322 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability

Application No.

10/732,741

Applicant(s)

CAO ET AL.

Examiner

Art Unit

PETER COUGHLAN

2129

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 12/12/2008.
2. ☒ The allowed claim(s) is/are 1-3,5,6 and 11-21.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

Examiner's Amendments / Reasons for Allowance

1. An Examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to the applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

In the claims

2. Claims 22 through 26 are cancelled.

3. Authorization for the Examiner's Amendment was given by a voice message by Mr. Christopher L. Holt (Reg. No. 45844) on 1/9/2009.

4. Claims 1-3, 5, 6, 11-21 are considered allowable since when reading the claims in light of the specification, as per MPEP §2111.01 or *Toro Co. v. White Consolidated Industries Inc.*, 199 F.3d 1295, 1301, 53 USPQ2d 1065, 1069 (Fed. Cir. 1999), none of the references of record alone or in combination disclose or suggest the combination of limitations specified in independent claims.

5. The following is an Examiner's Statement for reasons for allowance:

The cited art taken alone or in combination fails to teach the claimed invention of a computer readable storage medium including instructions readable by a computer, which when implemented, cause the computer to classify data comprising the steps of:

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receiving labeled data; receiving unlabeled data; constructing a first classifier and a second classifier using the labeled data; performing uncertainty reduction comprising: selecting a instances from the unlabeled data that are uncertain with respect to the first classifier; and selecting instances from the unlabeled data that are uncertain with respect to the second classifier; labeling the instances uncertain to the first classifier using the second classifier to form a first labeled set; and labeling the instances uncertain to the second classifier using the first classifier to form a second labeled set reconstructing the first classifier and the second classifier based on the first labeled set and the second labeled set; providing the reconstructed first classifier and the reconstructed second classifier for use in labeling data wherein selecting instances uncertain to the first classifier includes selecting instances of the unlabeled data as a function of uncertainty; wherein selecting instances of the unlabeled data as a function of uncertainty comprises calculating at least one value of uncertainty used to select the instances uncertain to the first classifier; and wherein selecting instances uncertain to the first classifier includes selecting instances having a value of uncertainty that is compared to a predetermined threshold wherein selecting instances having a value of uncertainty includes selecting instances having a value of uncertainty below the predetermined threshold.

6. The closest prior art teaches ('A Bootstrapping Method for Extracting Bilingual Text Pairs', referred to as Masuichi) a computer readable storage medium including instructions readable by a computer, which when implemented, cause the computer to

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classify data comprising the steps of: receiving labeled data (**Masuichi**, p1067, C2:42 through p1068, C1:18; 'Labeled data' of applicant is equivalent to '100 pairs' of a training corpus of Masuichi.); receiving unlabeled data (**Masuichi**, p1067, C2:42 through p1068, C1:18; 'Unlabeled data' of applicant is equivalent to '1000 English-Japanese patent text pairs' of Masuichi.); constructing a first classifier and a second classifier using the labeled data (**Masuichi**, p1067, C2:42 through p1068, C1:18; Construction of a first and second classifier of applicant is equivalent to 'create an initial word space' of the initial pairs of words of Masuichi.); performing uncertainty reduction comprising: selecting a instances from the unlabeled data that are uncertain with respect to the first classifier (**Masuichi**, p1068, C1:19-42; 'Unlabeled data' ... 'respect to the first classifier' of applicant is equivalent to calculating '1000 English patent vectors' of Masuichi.); and selecting instances from the unlabeled data that are uncertain with respect to the second classifier (**Masuichi**, p1068, C1:19-42; 'Unlabeled data' ... 'respect to the second classifier' of applicant is equivalent to calculating '1000 Japanese patent vectors' of Masuichi.); labeling the instances uncertain to the first classifier using the second classifier to form a first labeled set: and labeling the instances uncertain to the second classifier using the first classifier to form a second labeled set (**Masuichi**, p1068, C1:19-42; 'Labeling the instances uncertain to the first classifier using the second classifier' and 'second classifier using the first classifier to form a second labeled set' of applicant is illustrated by 'Next we extracted the English-Japanese patent pairs which satisfied the simple condition that the English patent vector in the pair has (the biggest cosine) with the Japanese patent vector in the pair among the 1000

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Japanese patent vectors and vice versa' of Masuichi.) reconstructing the first classifier and the second classifier based on the first labeled set and the second labeled set (**Masuichi**, p1068, C1:19-42; Reconstructing both first and second classifiers are done by catenation the 10 mutual proximity pairs to the initial 100 translation pairs of Masuichi.); providing the reconstructed first classifier and the reconstructed second classifier for use in labeling data (**Masuichi**, p1068, C1:42 through C2:2; Providing the reconstructed first and second classifiers of applicant is equivalent to the '110 English-Japanese pairs' of Masuichi.) wherein selecting instances uncertain to the first classifier includes selecting instances of the unlabeled data as a function of uncertainty (**Masuichi**, p1067, C2:5-29; 'Function of uncertainty' of applicant is disclosed by the cosine of the angle between the two vectors of Masuichi.); wherein selecting instances of the unlabeled data as a function of uncertainty comprises calculating at least one value of uncertainty used to select the instances uncertain to the first classifier (**Masuichi**, p1068, C1: 'Value of uncertainty' of applicant is disclosed by the cosine between two vectors. The more elements which are common between the two vectors, the greater cosine value and a lower 'value of uncertainty'); and wherein selecting instances uncertain to the first classifier includes selecting instances having a value of uncertainty that is compared to a predetermined threshold. (**Masuichi**, p1068, C1: 'Predetermined threshold' of applicant is disclosed by only the '10 most reliable mutual proximity pairs' of Masuichi.)

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7. The references either by themselves or in combination fail to teach wherein selecting instances having a value of uncertainty includes selecting instances having a value of uncertainty below the predetermined threshold. This entails selecting instances uncertain to the first classifier includes selecting instances of the unlabeled data as a function of uncertainty, and that the calculation of at least one value of uncertainty used to select the instances uncertain to the first classifier and selecting instances uncertain to the first classifier includes instances having uncertainty values related to a predetermined threshold.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

8. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Peter Coughlan whose telephone number is (571) 272-5990, Monday through Friday from 7:15 a.m. to 3:45 p.m., or contact the Supervisor Mr. David Vincent at (571) 272-3080.

/Peter Coughlan/

Examiner, Art Unit 2129

Patent Examiner

1/9/2009

/David R Vincent/

Supervisory Patent Examiner, Art Unit 2129

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